Telecommunications Law Professionals PLLC

875 15th Street, NW, Suite 750
Washington, DC 20005
telephone 202.789.3120
facsimile 202.789.3112
www.telecomlawpros.com

hdisenhaus@telecomlawpros.com
202.789.3123

February 14, 2014   78043.00001

VIA ELECTRONIC FILING COMMENT SYSTEM

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: Notice of Ex Parte Communication – *In the Matter of Rural Call Completion*, WC Docket No. 13-39;
         In the Matter of Technology Transitions Task Force, GN Docket No. 13-5, *AT&T Petition to Launch a
         Proceeding Concerning the TDM-to-IP Transition*, GN Docket No 12-353; *Connect America Fund*, WC
         Docket No. 10-90

Dear Ms. Dortch:

        On February 12, 2014, Robert McCausland, Vice President of Regulatory and Government Affairs
HyperCube Telecom, LLC ("HyperCube"), Doug Davis, Chief Technology Officer of HyperCube, and
Lynn Stang, Vice President & Deputy General Counsel of West Corporation, and the undersigned, Helen
E. Disenhaus of Telecommunications Law Professionals PLLC, met with Henning Schulzrinne, Chief
Technologist; Greg Kwan, Attorney-Advisor; Richard Hovey, Telecommunications Systems Specialist,
WCB; Lisa Gelb, Deputy Bureau Chief, WCB; Bill Dever, Chief, Competition Policy Division, WCB;
Carol Simpson, Deputy Chief, Competition Policy Division, WCB; Sandford Williams, Special Counsel,
Competition Policy Division; Chris Killion, Enforcement Bureau; Margaret Daily, Enforcement Bureau;
and Terry Cavanaugh, Enforcement Bureau. During the meeting, the parties discussed the attached
PowerPoint presentation. Most of the meeting addressed rural call completion issues with a focus on
HyperCube's proposed new "safe harbor" from certain rural call completion data collection requirements.
The parties also discussed IP Interconnection. HyperCube pointed out the adverse effects that current IP
interconnection pricing and practices may have on the IP transition and the adverse impact on rural call
completion of the congested tandem facilities serving Rural Local Exchange Carriers ("RLECs") to which
non-affiliates of tandem operators are relegated when they seek to deliver traffic to RLECs. The
presentation was consistent with HyperCube's previous filings in the above-referenced proceedings, as
supplemented below.[1]

---

[1] *See e.g.,* Comments of HyperCube on Further Notice of Proposed Rulemaking (Jan. 16, 2014) ("*HyperCube Rural Call Completion
FNPRM Comments*"); HyperCube, *Written Ex Parte Presentation*, WC Docket No. 13-39 (Oct. 22, 2013); HyperCube *Notice of Ex
Parte Meeting,* WC Docket No. 13-39 (Jul. 22, 2013); Reply Comments of HyperCube in WC Docket No. 13-39 (Jun. 11, 2013);
Comments of HyperCube in WC Docket No. 13-39 (May 13, 2013). *See also,* COMPTEL, *Ex Parte* in GN Docket No. 13-5,

The parties discussed the existing safe harbor adopted by the Federal Communications Commission ("FCC" or "Commission") in the recent Rural Call Completion Order,[2] and HyperCube expressed concern over the inherent anti-competitive issues within this approach. HyperCube noted that the existing approach would diminish competitive call-path options and ultimately advantage big ILECs by driving traffic to their legacy direct connections with RLECs. HyperCube emphasized the need for the Commission to also implement HyperCube's pragmatic, targeted, and pro-competitive approach that would alleviate rural call completion data collection and reporting obligations for providers that participate in a cooperative industry program to identify and ameliorate call completion problems in real time.

HyperCube's proposed safe harbor offers an alternative viewpoint to rural call completion problems. While the Commission has focused on the number of intermediate providers in the call flow to develop its safe harbor, HyperCube instead directs the focus to the nature of the services provided, showing that distinguishing "bad hops"[3] from "good hops" is the key to resolving many call completion problems. Under HyperCube's proposal, cooperating providers in the call path can ensure identified call completion problems are addressed and resolved promptly through an industry alert and response system. Rather than merely studying the call completion problem, or applying a flawed proxy in an attempt to address the problem, this approach would focus on direct problem solving.

In practice, HyperCube's safe harbor proposal[4] would allow an RLEC or interconnected VoIP ("IVoIP") provider experiencing a rural call completion problem to post an alert onto the industry-sponsored alert system connected to a listserv. The alert would provide sufficient information to allow other providers in the call flow to determine whether their networks were experiencing problems in completing calls to the notifying provider, as well as provide contact information for use by responding providers. Participating providers would review their traffic records to determine if they were terminating traffic in the affected area and, if so, would determine if there was evidence of anomalous routing arrangements. As shown in HyperCube Slide 10 (attached), which documents a recent problem resolution scenario, affected providers would contact the notifying provider to share information, such as the existence of substantial rate disparities and low Network Effectiveness Ratios on the route. The cooperating providers would then work with the notifying provider and other providers in the call path to resolve the problem. By cooperating, and using such techniques as attempted delivery of test traffic, the providers would generally be able to determine whether improper routing arrangements[5] were contributing to the problem (*i.e.*, "bad hops", which could be included in a route even under the 1-external-hop safe harbor), or if there could be a need for the RLEC or IVoIP provider to augment its

---

12-353, WC Docket No. 10-90, 05-25, RM-10593, RM-11358 (Feb. 6, 2014) (filed on behalf of HyperCube); Comments of HyperCube in GN Docket No. 13-5 (Jul. 8, 2013).

[2] *In the Matter of Rural Call Completion,* Report and Order and Further Notice of Proposed Rulemaking, WC Docket No. 13-39, FCC 13-135, ¶ 86 (rel. Nov. 8, 2013) ("*Rural Call Completion Order*").

[3] "'Bad hops' may include situations in which entities use unconventional, low-quality, or limited-capacity arrangements or rely on local interconnection arrangements to complete toll calls. In other cases, consumer-based connection arrangements, which are traditionally designed for simple call handling, are being used for interconnection." *HyperCube Rural Call Completion FNPRM Comments*, 10.

[4] The safe harbor would relax the data collection and reporting obligations adopted in the *Rural Call Completion Order* for participating providers. *See Rural Call Completion Order*, Section III.A.

[5] Such arrangements, for example, may involve impermissibly using local trunk groups to deliver long distance traffic, bypassing the local tandem, and denying compensation to the RLEC, as well as leading to congestion and call completion problems if Low Cost Routers selected the substantially lower cost route.

facilities. The safe harbor incentive would help ensure the industry participation necessary to make this model work. Having an alert system and listserv to facilitate this sort of cooperation among a wide range of industry participants would help ensure that more problems are addressed in a prompt and efficient manner, and more "bad hops" are identified and eliminated.

In response to several questions raised by Commission staff during the meeting regarding the proposed safe harbor, HyperCube explained that this safe harbor would not constrain Commission resources and would be completely developed and maintained by cooperating industry participants. Usually the RLEC would report the problem and provide contact information to the industry-hosted public Internet-based Call Completion Message Board system ("Alert Service"), but also another provider in the call path could provide the initial problem report, which would alert others in the call path to review their traffic records to determine if they were affected.[6] The affected parties would then work together to find a solution to the problem. The Commission would not need to conduct or sponsor this program.

With respect to Commission concerns raised during the meeting about the need for additional information collection approval to implement the safe harbor, HyperCube believes that the information supplied to the listserv would not be considered an "information collection by the FCC" for purposes of the Paperwork Reduction Act ("PRA") and therefore should not require approval from the Office of Management and Budget ("OMB").[7] Participants would merely provide a certification to the Commission of their active participation in the Alert Service program, which would be less detailed than that required under the current safe harbor.[8] Participants could maintain a log of the incidents they helped resolve, and an RLEC notice that a problem had been cleared could reflect its appreciation of the assistance received from other named providers, but there would not be identical data collection obligations or a requirement to participate in a specific number of problem investigations. Any information supplied and reviewed by the industry participants would be posted to the Alert Service on a voluntary basis and would not be collected or retained by the Commission unless the Commission chose to monitor the Alert Service to better understand the nature and scope of rural call completion problems. Given that even the existing safe harbor will not be implemented prior to initial Commission data collection, however, there should be time for PRA review if the Commission sought it.

The parties also discussed IP Interconnection during the meeting. HyperCube expressed its concern that existing IP connection approaches imposed by some dominant providers unilaterally, on a one-way basis, and at excessive prices and with inferior arrangements, may inhibit the IP transition, which would also adversely affect rural call completion. Not only are these arrangements sometimes priced

---

[6] During the meeting, it was suggested that the time devoted to and nature of the resolution of any reported issue could be included in the notice to the Alert Service that the problem had been cleared. This may demonstrate the ease with which tickets may be cleared, resulting in substantial consumer benefits.

[7] Under HyperCube's proposed safe harbor, the FCC is not "obtaining, causing to be obtained, soliciting, or requiring the disclosure . . . of information . . . by means of identical questions posed to, or identical reporting, recordkeeping, or disclosure requirements . . . ." (5 C.F.R. § 1320.3(c). Participating providers will choose to what information is necessary to provide on an *ad hoc* basis with no "identical" reporting, recordkeeping or disclosure requirements.

[8] While the Commission's safe harbor certification does require OMB approval because it "entail[s] burden in addition to that necessary to identify the respondent, the date, the respondent's address, and the nature of the instrument," HyperCube anticipates that its safe harbor certification would not require such additional information and will only seek the contact information of the provider and a certification statement of participation. *See* 5 .C.F.R. § 1320.3(h)(1); *Cf. Rural Call Completion Order* ¶ 142 (stating that the safe harbor certification, *inter alia*, is subject to OMB approval).

higher than TDM interconnection, but also they are not bi-directional, and are based on a network construct akin to the traditional customer model rather than the co-carrier interconnection model that is appropriate for certificated providers.

HyperCube also noted that rural call completion may also be adversely affected by the fact that even carriers with large amounts of traffic to exchange cannot obtain direct connection arrangements with many RLECs, and then are forced to connect via tandems operated by the dominant providers. Those tandems, however, typically have two (or more) sets of facilities, one for affiliates of the tandem operator, and others for competitive providers. The latter facilities are frequently congested, and no attempt is made to allocate capacity equitably to all providers, thus making the tandems choke points that may contribute to rural call completion problems.

Please direct any questions to the undersigned.

Very truly yours,

/s/ Helen E. Disenhaus

Helen E. Disenhaus
of TELECOMMUNICATIONS LAW PROFESSIONALS PLLC

Attachment

cc (via email): Henning Schulzrinne,
  Greg Kwan
  Lisa Gelb
  Bill Dever
  Carol Simpson
  Sandford Williams
  Richard Hovey
  Chris Killion
  Margaret Daily
  Terry Cavanaugh

HyperCube

Rural Call Completion:
Root Causes & Practical Solutions

IP Interconnection:
Pricing Can Inhibit IP Transition

February 12, 2014

west Hypercube, LLC is a subsidiary of West Corporation

HyperCube

To throw the baby out with the bathwater:

"...a concept used to suggest an avoidable error in which something good is eliminated when trying to get rid of something bad, or in other words, rejecting the essential along with the inessential." (Wikipedia)

THE EXISTING SAFE HARBOR IS FLAWED:

- By its nature, precludes economically-efficient traffic routing

- Advantages big ILECs by driving traffic to their legacy direct connections with RLECs:

  - Diminishes competitors' ability to achieve traffic volumes sufficient to establish their own direct connections with RLECs

  - Combined with the Rural Exemption, perpetuates exclusive legacy compensation arrangements between big ILECs and RLECs

RESULT: FEWER COMPETITIVE CALL-PATH OPTIONS, THEREBY DIMINISHING NETWORK RESILIENCE IN THE U.S., INCREASING CALL-COMPLETION COSTS, AND MOTIVATING BAD ACTORS

HyperCube

THE NATURE OF THE SERVICES PROVIDED, NOT THE NUMBER OF INTERMEDIATE PROVIDERS IN THE CALL FLOW, DETERMINES THE LIKELIHOOD OF CALL COMPLETION PROBLEMS

- **Effective Call Delivery Today = Distinguishing "Bad Hops" from "Good Hops"**

  - Key to effective call completion

  - Easily achievable through Commission endorsement and industry cooperation

  - Can be readily incentivized by an additional Safe Harbor that:

    - focuses on the real-time identification and elimination of problems,

    - efficiently directs Provider and FCC resources to problem resolution, and

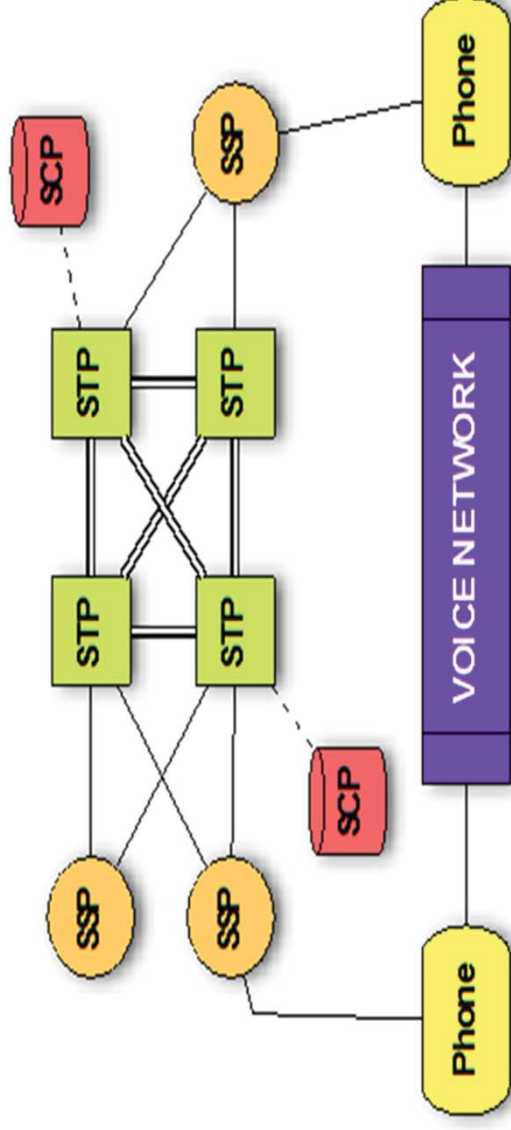   - provides specific information for targeted enforcement.

west

Hypercube, LLC is a subsidiary of West Corporation

HyperCube
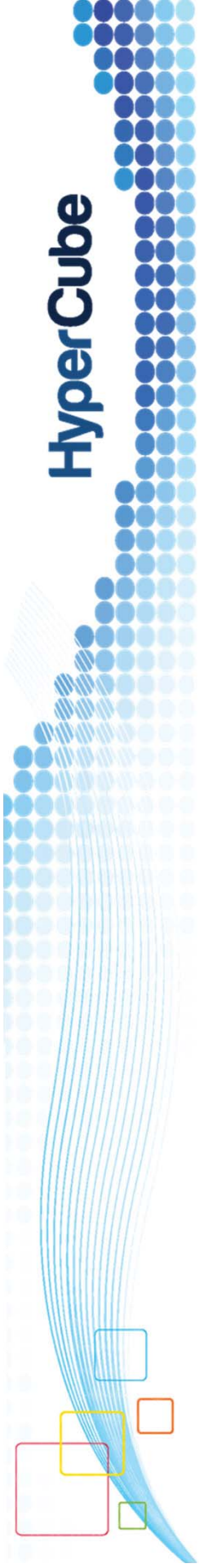
Distinguishing "Bad Hops" from "Good Hops"

CAS/MF Network – Simplified

HyperCube
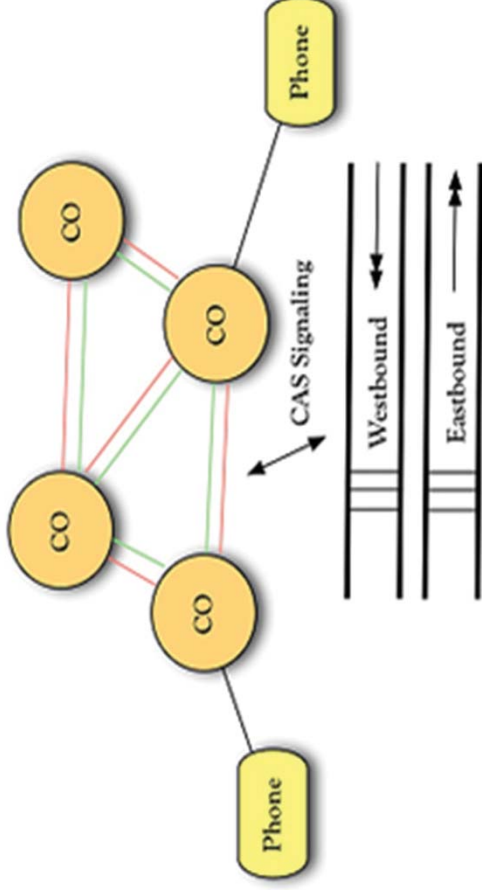
Distinguishing "Bad Hops" from "Good Hops"

SS7 Network – Simplified

5

HyperCube

Distinguishing "Bad Hops" from "Good Hops"

Simplified VoIP-Only Network

HyperCube
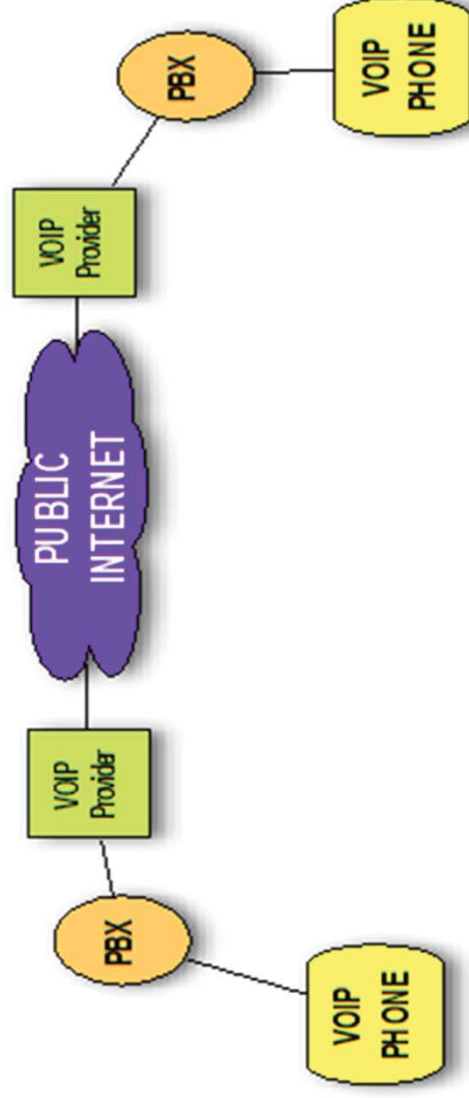
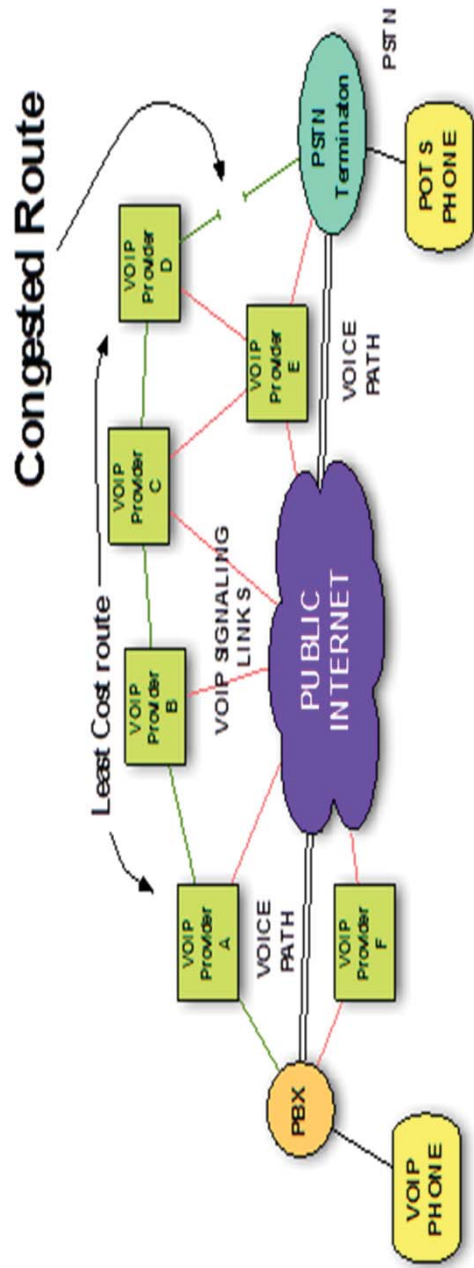## Distinguishing "Bad Hops" from "Good Hops"

VoIP Network with Multiple Hops but a Single Voice Path

HyperCube
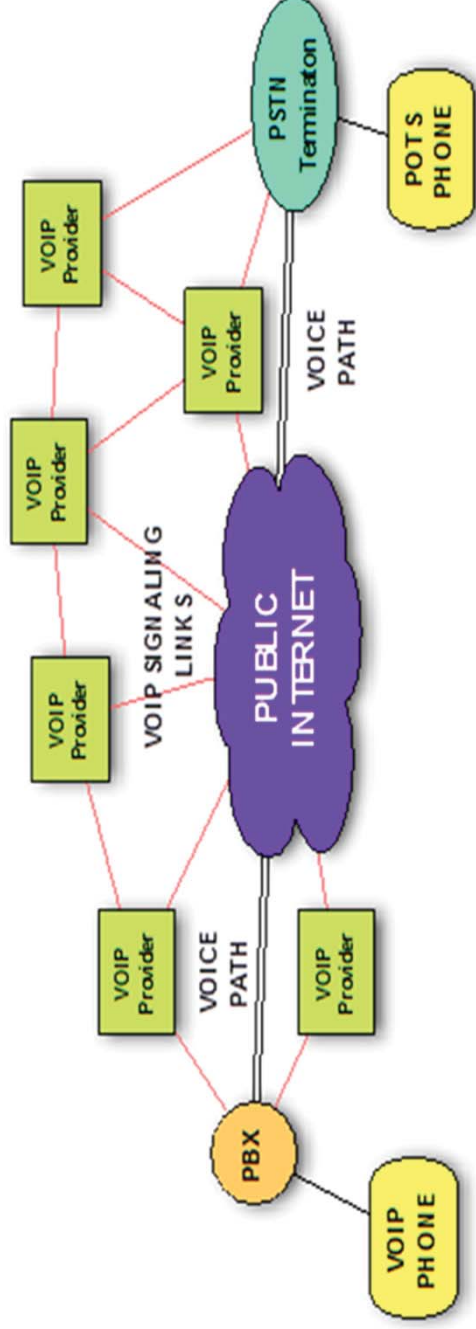
Distinguishing "Bad Hops" from "Good Hops"

Showing a Bad Hop Located Along a Least Cost Route

west

HyperCube

View of the Network

Conceptual View (FNPRM):

How the network really works:
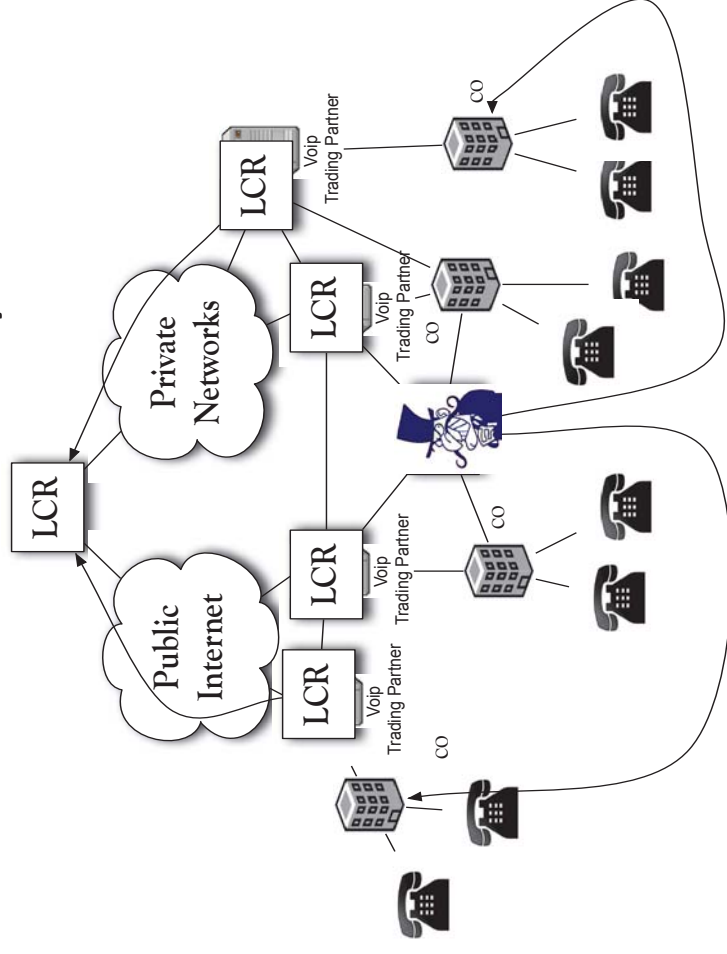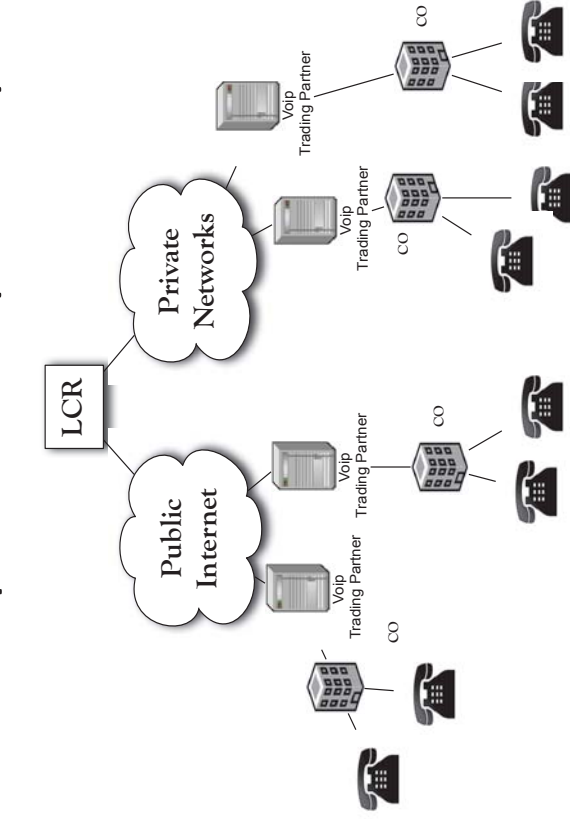
HyperCube

New Case: Colorado RLEC/Cooperative Resolution

Vendor	1	2	3	4	5	6	7
Sample Rate	RLEC Tariff: 0.012	0.015	0.009	0.009	0.009	0.0045	0.0041	0.0035
NER		99%	97%	94%	94%	55%	55%	18%

Process: 1) Trouble ticket received from customer. 2) HyperCube's investigation included a review of vendor rate decks for that route; significant rate disparities among vendors were observed. 3) HyperCube reported its observations to the RLEC's legal representative, who is familiar with HyperCube's rural call completion resolution efforts. 4) A key RLEC Network Engineer followed-up with HyperCube within minutes. 5) The RLEC and HyperCube, working together, were then able to identify LD traffic impermissibly entering the RLEC's network via local trunk groups. 6) The RLEC closed the exploited loophole by implementing NPA-NXX filtering on its local groups, thereby preventing further LD traffic from terminating into the local trunk groups.

By the next day, the problem was resolved.

Tentative Conclusion: A "bad actor" was using a large-market consumer cable product to push LD calls across local transit connections.

Disposition: LD vendor termination-route rates appropriately moved to or above RLEC tariff levels. NER now 99% across the board.

west   Hypercube, LLC is a subsidiary of West Corporation

10

HyperCube

THE PROPOSED SAFE HARBOR PROMOTES EFFECTIVE COOPERATIVE EFFORTS TO IDENTIFY AND ELIMINATE ROOT CAUSES OF RURAL CALL COMPLETION PROBLEMS IN REAL TIME, WITHOUT INHIBITING COMPETITION

COOPERATIVE, VOLUNTARY ALERT AND RESPONSE SYSTEM:

- **Message Board and Associated Listserv Alerts to address call completion problems as they arise:**
  - RLECs/IVoIPs experiencing rural call completion problems would post the problem and their contact info.
  - Affected providers would research within their networks and coordinate with the RLEC/IVoIP contact.

- **The Commission could monitor in real time, and address any specific call completion problems that persist.**

- **The Safe Harbor incentive would help ensure industry participation.**

- **Resources of all participants would be directed efficiently and constructively.**

- **The need for extensive data collection and reporting would be reduced.**

- **This Safe Harbor promotes rather than inhibits competition.**

west Hypercube, LLC is a subsidiary of West Corporation

HyperCube

IP INTERCONNECTION:

PRICING CAN INHIBIT THE IP TRANSITION

Pricing approaches by some dominant providers present a growing risk to the IP transition:
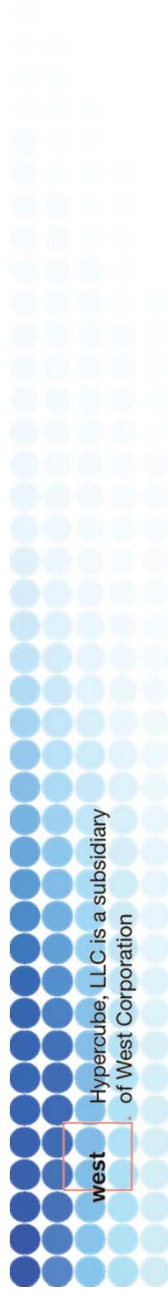
- Unilateral imposition of rates and terms

- Composite rates replacing disaggregated (unbundled) elements

- Rate-changes are increasingly volatile, frequent, extreme and unpredictable

- Transparency is diminishing.

- Proffered commercial agreements no longer include true "Peering."

HyperCube

Peering: " ...just a new name for an old concept of the benefits of networks connecting with one another."

— Chairman Tom Wheeler